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EXAMINER

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/443,793
Filing Date: November 18, 1999
Appellant(s): ALBRECHT, DAVID E.

William H. Eilberg
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 2-8-2008 appealing from the Office action mailed 9-17-2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

3,704,021	BARBARIN ET AL	11-1972
3,561,793	RODE	2-1971
5,518,257	BREAKER	5-1996

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5,765,835	JOHNSON	6-1998
3,167,322	AICHROTH	1-1965
2,278,721	JONES	4-1942

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

1. Claims 28-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barbarin (3,704,021) in view of Breaker in view of Rode (3,561,793).

Barbarin discloses an apparatus comprising a planar one-piece plate 14 with an opening. A one-piece seal 12 is disposed in the opening. A support ring 11 is disposed within the annular seal. The support ring is thinner than the other elements to allow fluid to act on the seal 12 when clamped. However, the support ring does not appear to have an orifice providing the fluid connection and it does not appear to be metal. Breaker teaches an apparatus comprising a plate, seal, and support ring (see Figs. 28 and 29). Breaker teaches equivalent means to provide fluid communication to the seal, either an orifice²⁰⁸⁷ or making the ring thinner. Breaker teaches equivalent materials for such rings, such as plastic or metal. Thus, it would have been obvious for one of ordinary skill in the art at the time the invention was made to provide an orifice in the support ring of Barbarin to allow fluid communication to the seal as such is an equivalent means as taught by Breaker and to make the ring of metal as such is an equivalent material.

It is unclear if there are bolt holes in the plate of Barbarin. Rode teaches an apparatus comprising a plate and seal in the opening. Rode teaches using bolt holes in the plate (see Fig. 9) to ensure proper placement and retainment between elements. It would have been obvious to one

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of ordinary skill in the art at the time the invention was made to modify the plate of Barbarin with bolt holes to ensure proper placement and securement.

Regarding claims 31 and 35, Barbarin does not appear to disclose the chamfers 20 are at an angle of about 45 degrees. It is not considered inventive to discover the workable or optimum ranges by routine experimentation absent the showing of criticality for such ranges. See *In re Aller*, 105 USPQ 233, 235 (CCPA 1955). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to make the angles about 45 degrees.

2. Claims 28-30 and 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson (5,765,835) in view of Aichroth (3,167,322) in view of Jones (2,278,721).

Johnson discloses an apparatus providing a seal between two port faces comprising a planar, one-piece plate 33 having plural bolt holes 25 and an opening. A seal (o-ring) 41 is disposed within the boundary of the opening. A support ring 29 is disposed within the seal. The plate 33 has a pair of parallel surfaces. The opening allows a flow path perpendicular to the plate (see Fig. 1) and adjacent to the support ring. The support ring is chamfered (at 31) on an outer portion. Johnson does not disclose the seal is annular (i.e. circular). Aichroth teaches an apparatus providing a seal between port faces comprising a plate, seal, and support ring. Aichroth teaches that the apparatus can be circular or rectangular. Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to make the seal (and therefore, the apparatus) annular as such are considered art equivalent shapes as taught by Aichroth.

Johnson does not disclose that the support ring has an orifice providing a fluid connection between the opening and seal. Jones teaches a seal between two port faces (of items 4 and 1,

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seen best in Figures 2 and 3). The seal comprises a support ring 38 disposed within a seal 46. Jones teaches using an orifice 39 to provide a fluid connection between the opening (i.e. inner circumference of the ring 38) and the seal 46 to ensure a fluid tight seal. The orifice allows fluid pressure to press the seal upward, outward, and downward into fluid sealing abutment with the surfaces of the joint (see page 2, line 73 through page 3, line 10). (Note: the seal of Jones is oriented between two surfaces similar to those of Johnson. The orifices of Jones are arranged generally parallel to these surfaces and would be arranged parallel to the surfaces of Johnson. Also, the end of the orifice would be immediately adjacent and in connection with the path because the support ring is.) Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the support ring of Johnson with the orifices taught by Jones so that fluid pressure within the opening is communicated to the seal to force it into fluid tight sealing engagement and prevent leakage through the joint.

3. Claims 28-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aichroth in view of Jones in view of Rode.

Aichroth discloses an apparatus providing a seal between port faces comprising a planar, one-piece plate 26 having an opening. A seal (o-ring) 22 is disposed within the boundary of the opening. A support ring 24 is disposed within the seal. The plate 26 has a pair of parallel surfaces. The opening allows a flow path perpendicular to the plate. The support ring is chamfered (at 32) on an outer portion. Aichroth does not disclose that the support ring has an orifice providing a fluid connection between the opening and seal. Jones teaches a seal between two port faces (of items 4 and 1, seen best in Figures 2 and 3). The seal comprises a support ring 38 disposed within a seal 46. Jones teaches using an orifice 39 to provide a fluid connection

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between the opening (i.e. inner circumference of the ring 38) and the seal 46 to ensure a fluid tight seal. The orifice allows fluid pressure to press the seal upward, outward, and downward into fluid sealing abutment with the surfaces of the joint (see page 2, line 73 through page 3, line 10). (Note: the seal of Jones is oriented between two surfaces similar to those of Aichroth. The orifices of Jones are arranged generally parallel to these surfaces and would be arranged parallel to the surfaces of Aicroth. Also, the end of the orifice would be immediately adjacent and in connection with the path because the support ring is.) Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the support ring of Aicroth with the orifices taught by Jones so that fluid pressure within the opening is communicated to the seal to force it into fluid tight sealing engagement and prevent leakage through the joint.

Aichroth does not disclose bolt holes in the plate 26. Rode teaches an apparatus comprising a plate and seal in the opening. Rode teaches using bolt holes in the plate (see Fig. 9) to ensure proper placement and retainment between elements. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the plate of Aichroth with bolt holes to ensure proper placement and securement.

Regarding claims 31 and 35, Aichroth discloses two chamfers 32 at an angle with the axis of the support ring. However, Aichroth does not disclose that the angle is about 45 degrees. It is not considered inventive to discover the workable or optimum ranges by routine experimentation. See *In re Aller*, 105 USPQ 233, 235 (CCPA 1955). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to make the chamfer at an angle of 45 degrees.

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4. Claims 28-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aichroth in view of Breaker in view of Rode.

Aichroth discloses an apparatus providing a seal between port faces comprising a planar, one-piece plate 26 having an opening. A seal (o-ring) 22 is disposed within the boundary of the opening. A support ring 24 is disposed within the seal. The plate 26 has a pair of parallel surfaces. The opening allows a flow path perpendicular to the plate. The support ring is chamfered (at 32) on an outer portion. Aichroth does not disclose an orifice in the support ring. Breaker teaches an apparatus between port faces comprising a plate, seal, and support ring. Breaker teaches using an orifice in the support ring to provide fluid communication between the opening and the annular seal. Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to use the orifice to provide fluid communication as taught by Breaker.

Aichroth does not disclose bolt holes in the plate 26. Rode teaches an apparatus comprising a plate and seal in the opening. Rode teaches using bolt holes in the plate (see Fig. 9) to ensure proper placement and retainment between elements. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the plate of Aichroth with bolt holes to ensure proper placement and securement.

Regarding claims 31 and 35, Aichroth discloses two chamfers 32 at an angle with the axis of the support ring. However, Aichroth does not disclose that the angle is about 45 degrees. It is not considered inventive to discover the workable or optimum ranges by routine experimentation. See *In re Aller*, 105 USPQ 233, 235 (CCPA 1955). Therefore, it would have

been obvious for one of ordinary skill in the art at the time the invention was made to make the chamfer at an angle of 45 degrees.

(10) Response to Argument

A. 1.

In response to Appellant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). In this case, Barbarin discloses a majority of the limitations required by claim 28 (for example). Breaker and Rode are being applied for their teachings of specific features in similar sealing arrangements. The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Appellant argues that Breaker does not disclose the one-piece seal required by the claims. The examiner disagrees. Breaker does disclose a one-piece seal (e.g. element 2126 in Fig. 29) with a thickness greater than the plates (see Figure 26). Element 2128 is not a seal. It is a spring element. And, claim 28 (for example) does not require the seal to be an o-ring.

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Regardless, Barbarin already discloses the o-ring seal required by the claims. Breaker is being applied as a teaching of equivalent support rings that provide fluid communication to an outer sealing element. Either ring will effectively provide fluid pressure to the seal member (regardless of its shape) to urge it into better sealing engagement with the mating components. Thus, it would have been obvious to form the support ring 11 of Barbarin with an orifice because the substitution of a known element/method would have yielded predictable results.

A. 2.

Appellant argues that neither support ring of Barbarin or Breaker is a “structural” member. And, it appears Appellant is arguing that Barbarin's ring is not a structural member because it is not metal. The examiner disagrees. First, both rings have structure and therefore can be considered “structural.” Further, Barbarin discloses that the ring 11 is configured to retain the o-ring within the opening of plate 14 so all components are connected as a unit (see col. 2, lines 4-9, and 12-22). Thus, the ring is a structural component of the assembly enabling it to be retained as a unit. As for the material, the examiner submits that a plastic ring can still provide the “structure” Appellant is arguing. Appellant even discloses that the ring can be a material other than metal (on page 7, lines 19-20 of Specification) as long as it is harder than the seal material. Both Barbarin and Breaker disclose this. Breaker teaches that the components (i.e. the inner ring and seal) of such gaskets that might be in contact with corrosive fluids be made of corrosion-resistant materials. Breaker teaches equivalent corrosion-resistant materials including metals (see col. 4, lines 32-34). It would have been obvious to one of ordinary skill to use any suitable, readily available material (such as metal) for the inner ring to provide corrosion-resistance.

Appellant also argues that Rode does not disclose a structural support ring. This argument is moot. Rode is only being applied for its teaching of bolt holes. Although, it is submitted that ring 116 in Figure 9 can be considered structural for similar reasons as above. Regardless, Barbarin, as argued above, already discloses a "non-threaded structural support ring."

Appellant summarizes that the examiner has not provided any motivation to combine the prior art. The examiner disagrees. KSR forecloses the argument that a specific teaching, suggestion, or motivation is required to support a finding of obviousness. And, as set forth above, there is both rationale and teaching for the proposed combination.

B. 1. a. Claims 28-30

Appellant argues that Johnson is non-analogous art. The examiner disagrees. First, claim 28 does not require a hydraulic fluid system. In fact, the claim does not even set forth the intended use is for a hydraulic fluid system. At most, the claim requires an apparatus for use as a fluid seal. Johnson discloses an apparatus for sealing a gas pressure. Gas is a fluid.

B. 1. b. i.

Appellant argues the orifices in Jones are not oriented in the manner required by the claims. The examiner disagrees. Appellant is arguing portions of the vessel that examiner is not relying on. Passages 2 and 3, member 12, and element 7 are not relevant to the teachings the examiner is using. Jones teaches a seal 46 and support ring 38 between mating faces of element 4 and 1 seen best in Figures 2 and 3. The orifice 39 is parallel to portions of the surfaces of 4 and 1 which abut the seal and ring. And, fluid flowing through orifices 39 is perpendicular to the main flow within the chamber (i.e. the chamber in the top part of element 1). Considered another

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way, Jones teaches an orifice that allows fluid communication between an opening in a support ring and a seal radially outward of the ring. Applying this teaching to Johnson would inherently provide an orifice that has an axis generally parallel to the surfaces of plate 33.

B. 1. b. ii.

Appellant argues that Jones addresses a different problem than that solved by the present invention. The examiner disagrees. Jones teaches using fluid pressure to further enhance the sealing ability of a seal. The duration of that seal is irrelevant. Using the orifices in the support ring of Johnson as taught by Jones would further enhance that sealing assembly. This is reason enough to at least try the combination.

B. 1. b. iii.

Appellant argues the examiner has used impermissible hindsight. The examiner disagrees. Both Johnson and Jones relate to sealing devices in fluid apparatuses. It would have been obvious to apply a known technique to improve a similar device in a similar way.

B. 1. c.

Appellant argues that Aichroth does not supply what is missing in the other references. The examiner disagrees. Aichroth is only being applied for showing art equivalent shapes for fluid seals. Again, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

B. 2. Claims 32-34

Appellant argues Johnson does not disclose a fluid component. The examiner disagrees. Both of 17 and 19 are fluid components in that gas is a fluid.

C. 1.

Appellant argues that Aichroth does not disclose a "plate." The examiner disagrees. First, there are no other limitations in the claims preventing element 26 from being a plate. Appellant argues that Aichroth is not a plate because it is very narrow/short in axial length. However, the claims do not require a certain axial dimension for the plate. Further, Appellant states that the ordinary meaning of "plate" is a generally flat member (see brief page 26, lines 1-2). Element 26 is a generally flat member, thus is a plate as defined by Appellant.

C. 2.

Appellant argues that it is not desirable to form bolt holes in retainer of Aichroth. The examiner disagrees. Bolt holes would make installation easier and more accurate. Rode teaches equivalent mounting techniques for multi-piece gaskets. Figures 1-5 of Rode are considered similar mountings to Aichroth. Figures 8 and 9, however, show an equivalent alternative wherein the outer retainer is lengthened to accommodate bolt holes. It would have been obvious to use equivalent methods to obtain predictable results.

C. 3.

Appellant's arguments against Jones are addressed above.

D.

The arguments incorporated by reference are addressed above. Appellant argues the incorporation of an orifice is hindsight. The examiner disagrees. Again, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight

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reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). In this case, Breaker teaches that an orifice improves the sealing ability of such fluid gaskets. This is the rationale for the modification.

Appellant argues that Aichroth discloses additional sealing material. The examiner disagrees. At least Figures 1-3 show the rings without the material 40. And, Aichroth discloses that rings 26 and 28 "may" have the additional material (col. 1, lines 49-51). Thus the material is considered optional.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Alison K. Pickard/

Primary Examiner, Art Unit 3676

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